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Preparation of strained Si/SiGe on insulator by hydrogen induced layer transfer technique

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Abstract of TW512487

A method for forming strained Si or SiGe on relaxed SiGe on insulator (SGOI) is described incorporating growing epitaxial Si_{1-y}Ge_y layers on a semiconductor substrate, implanting hydrogen into a selected Si_{1-y}Ge_{1-y} layer to form a hydrogen-rich defective layer, smoothing surfaces by Chemo-Mechanical Polishing, bonding two substrates together via thermal treatments and separating two substrates at the hydrogen-rich defective layer. The separated substrates may have its upper surface smoothed by CMP for epitaxial deposition of relaxed Si_{1-y}Ge_y, and strained Si_{1-y}Ge_y depending upon composition, strained Si, strained SiC, strained Ge, strained GeC, and strained Si_{1-y}Ge_yC.

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